



BLUE ROCK  
ENVIRONMENTAL, INC.

**FILE COPY**

Ms. Leanne Schroyer  
Hazardous Materials Specialist  
Humboldt County Health Department  
Division of Environmental Health  
100 H Street, Suite 100  
Eureka, California 95501

February 16, 2005

**Re: First Quarter 2005 Groundwater Monitoring Report  
Elliott's Service Center (former)  
761 Eel River Drive, Loleta, CA  
HCDEH LOP No. 12210  
Blue Rock Project No. NC-2**

Dear Ms. Schroyer,

This report presents the results of the first quarter 2005 groundwater monitoring activities at former Elliott's Service Center, 761 Eel River Drive, Loleta, Humboldt County, California (site) (Figure 1), and was prepared for Mr. Ken Elliott by Blue Rock Environmental, Inc. (Blue Rock).

## **Background**

### Site Description

The site is located on the eastside of the Eel River Drive on the western side of the unincorporated town of Loleta, California (Figure 1). The site is relatively flat and slopes gently to the west. The site is surrounded by residential properties to the north, east, and south. The west side of the property is primarily farmland with dispersed residences. During previous drilling activities at the site indicated an initial depth to groundwater from 8 to 20 feet below ground surface (bgs), which stabilized between 10 to 15 feet bgs.

### Site History

The service station was built in 1927 and has been owned and operated by several different parties until Mr. Elliot purchased the property from the Bank of Loleta in 1989. Since Mr. Elliot purchased the property, the site has operated as Elliott's Service Center, which retails gasoline and services automobiles.

On December 18, 1989, one 1,000-gallon gasoline underground storage tank (UST) (Tank #1), one 250-gallon diesel UST (Tank #2), and one 2,000-gallon gasoline UST (Tank #3) were removed from a common excavation. One 550-gallon diesel UST (Tank #4) was removed from a separate excavation. The tanks were removed from the site at the locations shown on Figure 2. Alpha Construction of Eureka, California performed the tank removal. Mr. Kevin Metcalfe of the Humboldt County Division of Environmental Health (HCDEH) observed the tank removal. Jim Roby, from Alpha Construction, collected five soil samples and two water samples from the



excavations. The depths of the soil samples were between 6 and 8 feet bgs. Mr. Metcalfe noted that groundwater was present in the excavations at a depth of approximately 8 feet. Laboratory analysis of the samples found gasoline range hydrocarbon contamination in the soil and groundwater samples collected from both excavations. Upon removal of the tanks, Mr. Elliott replaced the fuel system with the 5,000-gallon aboveground storage tank (AST) currently located onsite and used to dispense fuel.

#### Site Investigation and Corrective Action History

In November of 1996, Clearwater Group (Clearwater) supervised the drilling of eight soil borings to collect soil and groundwater samples around the former UST locations and the dispenser island. The results of this investigation indicated that soil and groundwater in the vicinity of the former USTs has been impacted by petroleum hydrocarbons. Based on the data collected during this phase of investigation, the soil contamination appears limited to the immediate vicinity of the former USTs and the extent of impacted groundwater has not been delineated. Results of this investigation were presented in Clearwater's *Preliminary Site Assessment Report* dated April 15, 1999.

In a site correspondence letter from HCDEH dated June 24, 1999, HCDEH requested a formal workplan to perform additional subsurface investigation at the site. Clearwater submitted the requested *Subsurface Investigation Workplan* dated September 9, 1999, which was approved in a letter from the HCDEH dated September 28, 1999.

On May 15, 2000, Clearwater completed a subsurface investigation, which consisted of the installation of four monitoring wells. Based on analytical results obtained from soil samples collected during installation of the four onsite monitoring wells, petroleum impacted soil is identified as primarily located west of the existing pump-island and north west of the former fuel UST locations. Low concentrations of petroleum hydrocarbons were detected in soil samples collected from each well. Based on well gauging data collected on May 15, 2000, site groundwater flows in a west southwesterly direction at a gradient of 0.029 ft/ft. Petroleum hydrocarbons detected in groundwater samples collected from MW-2 and MW-4 indicate that the downgradient extent of impacted groundwater has not been fully defined. Results of the May 2000 subsurface investigation were reported in Clearwater's *Subsurface Investigation Report* dated June 8, 2000.

The HCDEH requested a workplan to perform additional subsurface investigation at the site and conduct a sensitive receptor survey in a letter dated August 15, 2000. The *Sensitive Receptor Survey/ Workplan for Subsurface Investigation* dated November 9, 2000 was submitted by Clearwater to HCDEH and approved in a letter dated December 21, 2000. The sensitive receptor survey indicated that four domestic water wells are located within 1,000 feet of the site. Results of this survey are presented in Clearwater's *Sensitive Receptor Survey* dated November 9, 2000.

On August 8, 2001, Clearwater supervised installation of four additional monitoring wells associated with the subject property: MW-5, MW-6, MW-7 and MW-8 (Figure 2). These monitoring wells were placed in locations to further assess the sorbed and dissolved-phase



hydrocarbon contamination associated with the UST release. Sorbed and dissolved-phase contaminants were adequately delineated during this investigation. Results of this investigation are presented in Clearwater's *Additional Assessment and Third Quarter 2001 Groundwater Monitoring Report* dated September 14, 2001. The HCDEH concurred with Clearwater's recommendations with additional requirements in a letter dated November 5, 2001.

On January 31, 2002, Clearwater submitted a *Corrective Action Plan (CAP)* to the HCDEH. The CAP summarized sorbed and dissolved-phase hydrocarbon contamination at the site. Remedial alternatives were evaluated based on current contaminant conditions and sensitive receptor survey results. Clearwater recommended in-situ biodegradation of sorbed-phase and monitored natural attenuation for dissolved-phase remedial action. The HCDEH responded to this report with the request of performing and evaluating bioattenuation data in groundwater samples collected in 2002, and report findings in a *CAP Addendum/Site Conceptual Model Report*.

In August 2002, the monitoring well top-of-casing elevations were re-surveyed relative to mean sea level as required by the State Water Resources Control Board (SWRCB) for the Geotracker database. Revised elevations are shown in Table 1.

On January 30, 2003, Clearwater submitted a *Corrective Action Plan Addendum, Natural Attenuation Feasibility Study, and Site Conceptual Model Report* to the HCDEH. This report presented and discussed results from the natural attenuation study and summarized site conditions. Clearwater recommended continued groundwater monitoring for one year to determine a dissolved-phase contaminant attenuation timeframe and performing confirmation soil borings.

On August 12, 2003, Clearwater submitted a letter request to the HCDEH proposing source removal activities. The HCDEH concurred with this proposal in a letter dated August 14, 2003, and requested the submittal of a workplan.

On August 28, 2003, Clearwater submitted a *Source Removal Workplan* to the HCDEH. The workplan describes the proposed excavation locations and methods of source removal. The HCDEH commented on this workplan in a letter dated September 8, 2003.

In December of 2003, Clearwater supervised Felt Mountain Construction of Corning, California excavate 613 tons of petroleum contaminated soil located in the vicinity of the former UST fuel system. Based on mass calculations, Clearwater estimates that approximately 53.2 gallons of sorbed-phase TPHg were removed during remedial excavation activities. Remaining sorbed-phase TPHg was calculated at approximately 3.5 gallons. Based on these calculations approximately 93% of sorbed-phase TPHg contamination was removed from the site. Remedial activities are detailed in the *Remedial Report of Findings*, dated December 31, 2003.

On June 4, 2004, Blue Rock submitted an *Additional Investigation Workplan* to the HCDEH. This workplan was prepared in response to the HCDEH's request for a downgradient monitoring point from soil boring B5 and B7. This was requested in a letter dated September 8, 2003. The



workplan proposed the installation of two downgradient monitoring wells. This workplan was approved by the HCDEH in a letter dated June 9, 2004.

On June 16, 2004, Blue Rock supervised installation of two additional monitoring wells associated with the subject property: MW-9 and MW-10 (Figure 2). These monitoring wells were placed in locations to further assess the sorbed and dissolved-phase hydrocarbon contamination associated with the UST release. Sorbed and dissolved-phase contaminants were adequately delineated during this investigation. Results of this investigation are presented in Blue Rock's *Additional Investigation and Third Quarter 2004 Groundwater Monitoring Report* dated August 24, 2004.

### **Groundwater Monitoring Field and Laboratory Activities**

#### Groundwater Monitoring Activities

On February 2, 2005, all ten wells (MW-1 through MW-10) were gauged and a select group of wells were monitored (Table 4).

Prior to sampling, an electronic water level indicator was used to gauge depth to water in each well, accurate to within  $\pm 0.01$ -foot. All wells were checked for the presence of light non-aqueous phase liquid (LNAPL) petroleum prior to purging. No measurable thicknesses of LNAPL were observed on groundwater in any of the wells. Dissolved oxygen measurements were collected to monitor the effectiveness of the dissolved-phase hydrocarbon cleanup.

In preparation for sampling, the wells were purged of groundwater until sampling parameters (temperature, pH, and conductivity) stabilized.

Following recovery of water levels to at least 80% of their static levels in the other wells, groundwater samples were collected from the wells using disposable polyethylene bailers and transferred to laboratory supplied containers. Sample containers were labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the project laboratory.

Purging instruments were cleaned between use by an Alconox<sup>®</sup> wash followed by double rinse in clean tap water to prevent cross-contamination. Purge and rinse water was stored on-site in labeled 55-gallon drums pending future removal and disposal.

Groundwater monitoring and well purging information is presented on Gauge Data/Purge Calculations and Purge Data sheets (attached).

#### Groundwater Sample Analyses

Groundwater samples were analyzed by Kiff Analytical (Kiff), a DHS-certified laboratory, located in Davis, California, for the following analytes:

- TPHd by EPA Method 8015M with silica gel cleanup.
- TPHg, BTEX, and MTBE by EPA Method 5030/8260B.



## Groundwater Monitoring Results

### Groundwater Flow Direction and Gradient

Static groundwater in the wells was present beneath the site at depths ranging from approximately 10.28 (MW-10) to 14.25 (MW-7) feet bgs. Gauging data, combined with well elevation data, were used to calculate groundwater elevation, and to generate a groundwater elevation and gradient map. The groundwater flow direction was calculated to be toward the west-southwest at a gradient of 0.012 ft/ft (Figure 3). The groundwater gradient and flow direction are consistent with previous measurements.

### Groundwater Contaminant Analytical Results

LNAPL:	None
TPHd concentration:	<50 micrograms per liter ( $\mu\text{g/L}$ ) (MW-1, MW-5, MW-6, MW-7, MW-9, MW-10) to <200 $\mu\text{g/L}$ (MW-2, MW-4)
TPHg concentration:	<50 $\mu\text{g/L}$ (MW-1, MW-5, MW-6, MW-7) to 20,000 $\mu\text{g/L}$ (MW-4)
Benzene concentration:	<0.50 $\mu\text{g/L}$ (MW-1, MW-5, MW-6, MW-7) to 21 $\mu\text{g/L}$ (MW-4)
MTBE Concentration:	<0.50 $\mu\text{g/L}$ (MW-6, MW-7, MW-10) to 76 $\mu\text{g/L}$ (MW-1)
Dissolved Oxygen:	1.68 milligrams per liter (mg/L) (MW-1), 1.54 mg/L (MW-2), 1.32 mg/L (MW-4), 1.49 mg/L (MW-6)

Groundwater sample analytical results are shown graphically on Figures 4a, 4b, 4c and 4d, and cumulative groundwater sample analytical results are summarized in Table 1. Intrinsic bioremediation data are summarized in Table 2, and summary of well construction details is included in Table 3. Copies of the laboratory report and chain-of-custody form are attached.

### Remarks and Discussion

Groundwater sample analytical results fall within historical concentration range for the site. The dissolved-phase hydrocarbon concentrations detected below the site should attenuate over time since the majority of the source has been removed.

Blue Rock attempted to determine first-order decay rates for the dissolved-phase contaminants in order to predict a time-frame of when water quality goals would be met. Review of the data suggested that groundwater elevations and dissolved-phase contaminant concentrations are correlated, i.e. dissolved-phase concentrations go up when groundwater elevations go up and dissolved-phase concentrations go down when groundwater elevations go down. This phenomenon is clearly shown on Chart 1 "MW-4: TPHg & GW Elev Vs. Time" (attached). Therefore, in order to more accurately evaluate temporal trends in dissolved-phase concentrations, it is necessary to remove the influence of groundwater elevations on TPHg concentration data. This can be done simply using historical dissolved-phase concentration data from monitoring periods with very similar groundwater elevations. Seasonally, groundwater elevations in MW-4 fluctuate up to 6 feet, from approximately 13.5 to 19.5 feet bgs. Blue Rock



selected data from monitoring events when groundwater elevations were relatively consistent with fluctuation of only 1.2 feet, which ranged only between 16.2 and 17.4 feet bgs. TPHg concentrations were plotted against time for these specific monitoring events, and a trend line was fitted to the data (Chart 2). The result indicates a TPHg first order decay rate of  $-0.0015/\text{day}$  with a  $R^2$  value of 0.85, which indicates that the calculated decay rate is statistically significant. Therefore, extrapolation of this decay rate indicates that TPHg will meet water the water quality goal of  $50 \mu\text{g/L}$  by approximately 2011 (for this average groundwater elevation beneath the site). Based on this preliminary analysis, it appears that residual dissolved-phase concentrations will reach water quality goals in a reasonable period of time through in-situ decay alone.

#### **Project Status and Recommendations**

- The site is currently being monitored on a quarterly basis per the HCDEH directives. The next quarterly sampling event is scheduled for May 2005. Groundwater samples will be analyzed for TPHd, TPHg, BTEX, and MTBE.
- Table 4 shows the groundwater monitoring schedule.
- Blue Rock recommends preparation of a comprehensive closure summary and evaluation for the site.



## Certification

This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (707) 441-1934.

Sincerely,  
Blue Rock Environmental, Inc.

Prepared by:

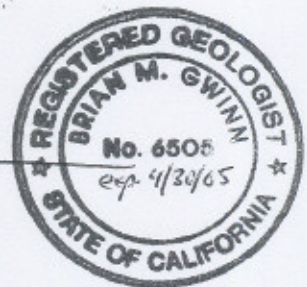


Scott Ferriman  
Project Scientist

Reviewed by:



Brian Gwinn, PG  
Principal Geologist





Attachments:

Table 1: Groundwater Elevations and Analytical Results

Table 2: Intrinsic Bioremediation Data

Table 3: Well Construction Details

Table 4: Groundwater Monitoring Schedule

Figure 1: Site Location Map

Figure 2: Site Plan

Figure 3: Groundwater Elevation and Gradient – 2/2/05

Figure 4a: Dissolved-Phase TPHd Distribution Map – 2/2/05

Figure 4b: Dissolved-Phase TPHg Distribution Map – 2/2/05

Figure 4c: Dissolved-Phase Benzene Distribution Map – 2/2/05

Figure 4d: Dissolved-Phase MTBE Distribution Map – 2/2/05

Chart 1: MW-4: TPHg & GW Elev. Vs. Time

Chart 2: MW-4: TPHg Vs. Time for Consistent GW Elevs (16'-17.5')

Blue Rock's Gauge/Purge Calculations and Well Purging Data Field Sheets

Laboratory Analytical Reports and Chain-of-Custody Form

Distribution:

Ken Elliott  
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Betty Kinoshita  
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**Table 1**  
**GROUNDWATER ELEVATIONS AND**  
**ANALYTICAL RESULTS**  
 Elliott's Service Center  
 761 Eel River Drive  
 Loleta, California  
 Blue Rock Project No. NC-002

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Methanol (µg/L)	Ethanol (µg/L)
Tank#3	12/18/89	--	--	--	24,000	--	--	<48	140	130	910	--	--	--	--	--	--	--
Tank#4	12/18/89	--	--	--	26,000	--	--	680	850	670	2,500	--	--	--	--	--	--	--
B-6	11/21/96	--	--	--	53	--	--	<0.5	<0.5	<0.5	<1	<5	--	--	--	--	--	--
B-7	11/21/96	--	--	--	4,200	93	--	39	<5	220	290	<50	--	--	--	--	--	--
MW-1	5/15/00	98.88	10.21	88.67	<50	<50	--	<0.3	<0.3	0.5	<0.6	6.4	<0.5	<0.5	0.5	<500	--	--
	8/23/00	98.88	12.31	86.57	<50	<50	<50	0.54	<0.5	<0.5	<0.5	11	--	--	0.98	--	<50	<5
	10/30/00	98.88	12.78	86.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/00	98.88	12.58	86.30	<50	<50	--	<0.5	<0.5	<0.5	<0.5	4.8	<0.5	<0.5	<0.5	<5	<50	<5
	12/7/01	98.88	12.23	86.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/22/01	98.88	12.17	86.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/6/01	98.88	11.69	87.19	<50	<50	--	<0.5	<0.5	<0.5	<0.5	23	<0.5	<0.5	2.7	<5	<50	<5
	3/8/01	98.88	10.75	88.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/01	98.88	12.01	86.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/12/01	98.88	12.81	86.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/01	98.88	14.12	84.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/01	98.88	14.91	83.97	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<5	<50	<5.0
	11/2/01	98.88	16.18	82.70	<50	--	--	<0.5	<0.5	<0.5	<0.5	0.51	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	98.88	11.89	86.99	80	--	--	2.5	<0.5	<0.5	<0.5	33	<0.5	<0.5	6.3	<5	--	--
	5/8/02	98.88	11.98	86.90	130	320	--	4.7	<0.5	<0.5	<0.5	58	<0.5	<0.5	11	<5	--	--
	8/14/02	29.57	15.33	14.24	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<5	--	--
	11/13/02	29.57	16.58	12.99	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	29.57	11.65	17.92	210	<200	--	10	<0.5	<0.5	<0.5	71	<0.5	<0.5	12	<5	--	--
	5/9/03	29.57	10.18	19.39	150	340	--	4.2	<0.5	<0.5	<0.5	39	<0.5	<0.5	6.4	<5	--	--
	8/18/03	29.57	12.71	16.86	<50	<50	--	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<0.5	<0.5	<5	--	--
	11/7/03	29.57	14.74	14.83	<50	93	--	<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<5	--	--
	2/11/04	29.57	10.50	19.07	<50	230	--	<0.5	<0.5	<0.5	<0.5	43	<0.5	<0.5	1.8	<5	--	--
	5/4/04	29.57	11.55	18.02	68	<50	--	<0.5	<0.5	<0.5	<1	85	<0.5	<0.5	2.9	<5	--	--
	7/27/04	29.57	14.44	15.13	<50	<50	--	<0.5	<0.5	<0.5	<0.5	7.4	--	--	--	--	--	--
	11/5/04	29.57	13.14	16.43	<50	<50	--	<0.5	<0.5	<0.5	<0.5	43	--	--	--	--	--	--
	2/2/05	29.57	10.99	18.58	<50	<50	--	<0.5	<0.5	<0.5	<0.5	76	--	--	--	--	--	--
MW-2	5/15/00	98.10	10.35	87.75	708	186	--	<0.3	7.7	19.2	152	27.2	<0.5	<0.5	<0.5	<500	--	--
	8/23/00	98.10	12.32	85.78	2,200	241	<50	8.9	11	72	410	79	--	--	1.3	--	<50	<5
	10/30/00	98.10	12.59	85.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/00	98.10	12.35	85.75	1,600	226	--	4.9	1.1	46	240	38	<0.5	<0.5	0.57	11	<50	<5
	12/7/01	98.10	11.99	86.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/22/01	98.10	11.96	86.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/6/01	98.10	11.49	86.61	1,600	<200	--	2.3	3.0	31	230	35	<0.5	<0.5	0.77	6.8	<50	<5



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MW-2	3/8/01	98.10	10.38	87.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/01	98.10	11.79	86.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/12/01	98.10	12.59	85.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/01	98.10	13.95	84.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/01	98.10	14.73	83.37	310	<100	--	1.7	<0.5	3.6	8.4	39	<0.5	<0.5	1.1	7.4	<50	<5.0
	11/2/01	98.10	16.02	82.08	<50	--	--	<0.5	<0.5	<0.5	<0.5	7.1	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	98.10	11.73	86.37	4,200	--	--	4.6	5.5	110	450	68	<0.5	<0.5	2.8	17	--	--
	5/8/02	98.10	11.79	86.31	8,800	<500	--	19	18	290	1,200	150	<0.5	<0.5	4.9	30	--	--
	8/14/02	28.81	15.17	13.64	270	<100	--	1	0.53	11	14	53	<0.5	<0.5	2	9.5	--	--
	11/13/02	28.81	16.44	12.37	610	<100	--	<0.5	0.55	8.1	32	7.4	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	28.81	11.46	17.35	6,400	<2,200	--	4.2	6.9	160	490	89	<0.5	<0.5	3.8	15	--	--
	5/9/03	28.81	9.97	18.84	18,000	<3,000	--	6.1	21	480	1,800	100	<2.5	<2.5	4.2	<25	--	--
	8/18/03	28.81	12.48	16.33	570	<200	--	0.9	<0.5	19	48	28	<0.5	<0.5	1.3	<5	--	--
	11/7/03	28.81	14.49	14.32	3,500	<600	--	4.6	1.6	130	200	130	<0.5	<0.5	6.5	18	--	--
	2/11/04	28.81	10.31	18.50	21,000	<3,000	--	41	41	520	2,100	110	<5	<5	<5	<50	--	--
	5/4/04	28.81	11.36	17.45	13,000	840*	--	9.7	19	470	1,750	72	<5	<5	<5	<50	--	--
	7/27/04	28.81	14.22	14.59	880	<300	--	2.7	0.55	28	15	82	--	--	--	--	--	--
	11/5/04	28.81	12.89	15.92	350	<100	--	<0.5	<0.5	12	15	29	--	--	--	--	--	--
	2/2/05	28.81	10.74	18.07	4,900	<200	--	4.5	5.8	160	390	35	--	--	--	--	--	--
MW-3	5/15/00	98.05	10.46	87.59	<50	<50	--	<0.3	<0.3	<0.3	<0.6	<2	<0.5	<0.5	<0.5	<500	--	--
	8/23/00	98.05	12.46	85.59	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<0.5	--	<50	<5
	10/30/00	98.05	12.71	85.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/00	98.05	12.47	85.58	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<5	<50	<5
	12/7/01	98.05	12.11	85.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/22/01	98.05	12.06	85.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/6/01	98.05	11.58	86.47	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.51	<0.5	<0.5	<0.5	<5	<50	<5
	3/8/01	98.05	10.41	87.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/01	98.05	11.88	86.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/12/01	98.05	12.71	85.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/01	98.05	14.08	83.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/01	98.05	14.88	83.17	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.56	<0.5	<0.5	<0.5	<5	<50	<5
	11/2/01	98.05	16.17	81.88	<50	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	98.05	11.84	86.21	<50	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	5/8/02	98.05	11.90	86.15	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	8/14/02	28.75	15.33	13.42	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	11/13/02	28.75	16.70	12.05	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	28.75	11.55	17.20	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	5/9/03	28.75	10.00	18.75	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	8/18/03	28.75	12.58	16.17	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	11/7/03	28.75	14.62	14.13	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	2/11/04	28.75	10.39	18.36	<50	180	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--



**Table 1**  
**GROUNDWATER ELEVATIONS AND**  
**ANALYTICAL RESULTS**  
 Elliott's Service Center  
 761 Eel River Drive  
 Loleta, California  
 Blue Rock Project No. NC-002

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Methanol (µg/L)	Ethanol (µg/L)
MW-3	5/4/04	28.75	11.45	17.30	<50	<50	--	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<5	--	--
	7/27/04	28.75	14.38	14.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	28.75	13.07	15.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	28.75	10.83	17.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/15/00	98.43	10.27	88.16	3,390	1,490	--	13	6	350	326	<2	<0.5	<0.5	<0.5	<500	--	--
	8/23/00	98.43	12.33	86.10	15,000	1,550	<50	43	15	780	770	3.0	--	--	<2	--	<200	<20
	10/30/00	98.43	12.64	85.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/16/00	98.43	12.38	86.05	10,000	1,800	--	20	7.4	410	420	5.2	<2	<2	<2	<20	<200	<20
	12/7/01	98.43	12.03	86.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1/22/01	98.43	12.01	86.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/5/01	98.43	11.52	86.91	15,000	<800	--	32	14	720	830	5.9	<2	<2	<2	<20	<200	<20
	3/8/01	98.43	10.40	88.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/11/01	98.43	11.83	86.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/12/01	98.43	12.63	85.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/20/01	98.43	13.96	84.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/01	98.43	14.76	83.67	3,400	<1,000	--	13	3.4	220	180	3	<1.0	<1.0	<1.0	16	<100	<10
	11/2/01	98.43	16.04	82.39	53	--	--	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	98.43	11.72	86.71	14,000	--	--	22	14	640	980	3.3	<2.5	<2.5	<2.5	<25	--	--
	5/8/02	98.43	11.80	86.63	8,100	<1,000	--	15	6.5	340	530	2.9	<1.0	<1.0	<1.0	15	--	--
	8/14/02	29.14	15.19	13.95	1,700	<250	--	5.8	0.81	53	11	<1.5	<0.5	<0.5	<0.5	7.4	--	--
	11/13/02	29.14	16.46	12.68	510	<50	--	1.5	<0.5	15	4.6	<0.5	<0.5	<0.5	<0.5	<5.0	--	--
	2/25/03	29.14	11.46	17.68	6,600	<2,000	--	16	4.3	170	200	2.9	<0.5	<0.5	<0.5	19	--	--
	5/9/03	29.14	9.98	19.16	6,700	<2,000	--	16	5.4	350	250	3.4	<1	<1	<1	21	--	--
	8/18/03	29.14	12.53	16.61	4,000	<1,500	--	8	2.2	110	150	1.5	<0.5	<0.5	<0.5	8.7	--	--
	11/7/03	29.14	14.55	14.59	3,000	<800	--	7.6	0.71	81	36	1.4	<0.5	<0.5	<0.5	9.2	--	--
	2/11/04	29.14	10.34	18.80	23,000	<5,000	--	29	17	1,100	1,400	<5	<5	<5	<5	<50	--	--
	5/4/04	29.14	11.37	17.77	31,000	5,700*	--	<50	<50	1,700	2,250	<50	<50	<50	<50	<500	--	--
	7/27/04	29.14	14.27	14.87	870	<300	--	3.6	0.56	35	9.5	0.64	--	--	--	--	--	--
	11/5/04	29.14	12.97	16.17	1,300	<400	--	5.2	0.58	16	22	0.66	--	--	--	--	--	--
	2/2/05	29.14	10.78	18.36	20,000	<200	--	21	9.9	920	920	<2.5	--	--	--	--	--	--
MW-5	8/15/01	97.54	14.23	83.31	<50	150	--	<0.5	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	<5	<50	<5
	11/2/01	97.54	15.53	82.01	<50	--	--	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	97.54	11.42	86.12	<50	--	--	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<5	--	--
	5/8/02	97.54	11.52	86.02	<50	72	--	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<5	--	--
	8/14/02	28.28	14.72	13.56	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<5	--	--
	11/13/02	28.28	15.92	12.36	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	28.28	11.23	17.05	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.93	<0.5	<0.5	<0.5	<5	--	--
	5/9/03	28.28	9.89	18.39	<50	110	--	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<5	--	--
	8/18/03	28.28	12.17	16.11	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.91	<0.5	<0.5	<0.5	<5	--	--
	11/7/03	28.28	14.11	14.17	<50	130	--	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<5	--	--



Table 1  
GROUNDWATER ELEVATIONS AND  
ANALYTICAL RESULTS  
Elliott's Service Center  
761 Eel River Drive  
Loleta, California  
Blue Rock Project No. NC-002

Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Methanol (µg/L)	Ethanol (µg/L)
MW-5	2/11/04	28.28	10.18	18.10	<50	140	--	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<5	--	--
	5/4/04	28.28	11.13	17.15	<50	<50	--	<0.5	<0.5	<0.5	<1	0.6	<0.5	<0.5	<0.5	<5	--	--
	7/27/04	28.28	13.81	14.47	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.6	--	--	--	--	--	--
	11/5/04	28.28	12.54	15.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	28.28	10.57	17.71	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.73	--	--	--	--	--	--
MW-6	8/15/01	97.90	15.02	82.88	<50	<50	--	<0.5	<0.5	<0.5	<0.5	3.9	<0.5	<0.5	<0.5	<5	<50	<5
	11/2/01	97.90	16.28	81.62	<50	--	--	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	97.90	11.95	85.95	<50	--	--	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<5	--	--
	5/8/02	97.90	12.04	85.86	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<5	--	--
	8/14/02	28.58	15.46	13.12	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<5	--	--
	11/13/02	28.58	16.73	11.85	<50	<50	--	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	28.58	11.67	16.91	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<5	--	--
	5/9/03	28.58	10.19	18.39	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.85	<0.5	<0.5	<0.5	<5	--	--
	8/18/03	28.58	12.70	15.88	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.72	<0.5	<0.5	<0.5	<5	--	--
	11/7/03	28.58	14.76	13.82	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.96	<0.5	<0.5	<0.5	<5	--	--
	2/11/04	28.58	10.57	18.01	<50	160	--	0.84	<0.5	<0.5	1.4	2.3	<0.5	<0.5	<0.5	<5	--	--
	5/4/04	28.58	11.62	16.96	<50	<50	--	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<5	--	--
	7/27/04	28.58	14.51	14.07	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.3	--	--	--	--	--	--
	11/5/04	28.58	13.17	15.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	28.58	10.97	17.61	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-7	8/15/01	98.61	19.11	79.50	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<5	<50	<5
	11/2/01	98.61	20.63	77.98	<50	--	--	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	98.61	15.53	83.08	<50	--	--	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<5	--	--
	5/8/02	98.61	15.63	82.98	<50	76	--	<0.5	<0.5	<0.5	<0.5	2.0	<0.5	<0.5	<0.5	<5	--	--
	8/14/02	29.29	19.93	9.36	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<5	--	--
	11/13/02	29.29	21.62	7.67	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.93	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	29.29	15.21	14.08	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<5	--	--
	5/9/03	29.29	13.24	16.05	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.81	<0.5	<0.5	<0.5	<5	--	--
	8/18/03	29.29	16.41	12.88	<50	<50	--	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<5	--	--
	11/7/03	29.29	18.63	10.66	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	2/11/04	29.29	14.01	15.28	<50	140	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	5/4/04	29.29	15.38	13.91	<50	<50	--	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<5	--	--
	7/27/04	29.29	18.76	10.53	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-8	11/5/04	29.29	17.09	12.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	29.29	14.25	15.04	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	8/15/01	98.20	14.99	83.21	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<50	<5
	11/2/01	98.20	16.26	81.94	<50	--	--	<0.5	<0.5	<0.5	<0.5	0.61	<0.5	<0.5	<0.5	<5	--	--
	2/1/02	98.20	11.94	86.26	<50	--	--	<0.5	<0.5	<0.5	<0.5	0.65	<0.5	<0.5	<0.5	<5	--	--
	5/8/02	98.20	11.95	86.25	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--



**Table 1**  
**GROUNDWATER ELEVATIONS AND**  
**ANALYTICAL RESULTS**  
 Elliott's Service Center  
 761 Eel River Drive  
 Loleta, California  
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Well No.	Sampling Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TBA (µg/L)	Methanol (µg/L)	Ethanol (µg/L)
MW-8	8/14/02	28.89	15.41	13.48	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.63	<0.5	<0.5	<0.5	<5	--	--
	11/13/02	28.89	16.71	12.18	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.57	<0.5	<0.5	<0.5	<5	--	--
	2/25/03	28.89	11.63	17.26	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	5/9/03	28.89	10.06	18.83	<50	<50	--	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<5	--	--
	8/18/03	28.89	12.68	16.21	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	11/7/03	28.89	14.74	14.15	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	2/11/04	28.89	10.45	18.44	<50	170	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--
	5/4/04	28.89	11.52	17.37	<50	<50	--	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<5	--	--
	7/27/04	28.89	14.47	14.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	28.89	13.17	15.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	28.89	10.91	17.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	7/27/04	28.28	13.94	14.34	150	<100	--	0.88	<0.5	1.4	16	0.68	--	--	--	--	--	--
	11/5/04	28.28	12.64	15.64	140	<50	--	1.0	<0.5	3.2	9.4	0.81	--	--	--	--	--	--
	2/2/05	28.28	10.53	17.75	440	<50	--	4.8	1.1	8.7	51	7.9	--	--	--	--	--	--
MW-10	7/27/04	28.78	13.70	15.08	84	<50	--	1.9	<0.5	0.52	5.7	<0.5	--	--	--	--	--	--
	11/5/04	28.78	12.42	16.36	1,200	<200	--	43	1.2	12	120	<0.5	--	--	--	--	--	--
	2/2/05	28.78	10.28	18.50	180	<50	--	11	<0.5	1.1	19	<0.5	--	--	--	--	--	--
PZ-1	5/15/00	--	--	--	<50	206	--	<0.3	<0.3	0.6	0.8	<2	<0.5	<0.5	<0.5	<500	--	--
MCL					--	--	--	1	150	300	1,750	13						
Taste & odor threshold					5	100	--	--	42	29	17	--						
Cleanup Goals					50	100	175	0.5	42	29	17	5						

**Notes:**

TOC: Top of casing referenced to feet above mean sea level (msl) in August 2002.  
 DTW: Depth to water as referenced to top of well casing.  
 GWE: Groundwater elevation as referenced to benchmark.  
 TPHg: Total Petroleum Hydrocarbons as Gasoline by EPA 5030/8260B.  
 TPHd: Total Petroleum Hydrocarbons as Diesel by EPA Method 3510/8015M.  
 TPHmo: Total Petroleum Hydrocarbons as motor oil by EPA Method 3510/8015M.  
 BTEX: Benzene, toluene, ethylbenzene, and xylenes by EPA method 8260B.  
 MTBE: Methyl tertiary butyl ether by EPA method 8260B.  
 DIPE: Diisopropyl ether by EPA Method 8260B.

ETBE: Ethyl-t-butyl ether by EPA Method 8260B.  
 TAME: Tertiary amyl methyl ether by EPA Method 8260B.  
 TBA: Tert-Butanol by EPA Method 8260B.  
 Methanol & Ethanol: by EPA Method 8260B.  
 µg/L: micrograms per liter = ppb = parts per billion  
 "--": Not analyzed, available, or applicable  
 MCL: Maximum contaminant level, a Federal drinking water standard based on health, technology and economics.  
 Taste & odor threshold: A drinking water standard  
 \* The sample chromatogram does not match the standard chromatogram for this compound.



**TABLE 2**  
**INTRINSIC BIOREMEDIATION DATA**  
 Elliott's Service Center  
 761 Eel River Drive, Loleta, California  
 Blue Rock Project No. NC-002

																Aerobic				Anaerobic	
Well No.	Date	TPHg (µg/L)	MTBE (µg/L)	D.O.* (mg/L)	Eh* (mV)	Temp (C)	pH*	Total		Nitrate (mg/L)	Ammonia (mg/L)	Sulfate (mg/L)	Ortho Phosphate (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	COD (mg/L)	BOD (mg/L)	Heterotrophic		Hydrocarbon	Hydrocarbon
								Alkalinity (mg/L)										Plate Count (CFU/mL)	Degraders (CFU/mL)	Degraders (CFU/mL)	
MW-1	5/8/02	130	58	0.86	115	17.2	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/02	<50	1.7	4.04	249	15.2	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/13/02	<50	0.7	2.21	204	15.2	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/25/03	210	71	1.28	232	13.3	6.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	150	39	1.16	29	14.6	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	<50	2.5	1.04	161	16.0	6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	<50	3.4	1.19	292	16.1	5.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	<50	43	--	--	15.3	6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	68	85	2.94	--	15.2	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	<50	7.4	1.86	--	16.0	6.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	<50	43	1.71	--	15.7	5.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	<50	76	1.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	5/8/02	8,800	150	1.00	99	18.0	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/02	270	53	3.60	222	15.9	6.4	39	17	0.50	2.9	--	<0.1	2.4	<10	<3	2,000	200	200	200	
	11/13/02	610	7.4	3.16	197	16.5	5.6	34	18	0.17	3.3	--	<0.1	<2	14	<3	200,000	100	20,000		
	2/25/03	6,400	89	1.65	148	13.4	6.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	18,000	100	1.44	21	14.9	5.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	570	28	1.22	127	16.6	6.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	3,500	130	1.27	181	16.3	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	21,000	110	--	--	15.3	6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	13,000	72	2.70	--	16.1	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	880	82	1.83	--	16.0	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	350	29	1.63	--	15.8	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	4,900	35	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/8/02	<50	<0.5	1.20	112	18.1	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/02	<50	<0.5	3.84	233	15.8	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/13/02	<50	<0.5	3.67	229	15.2	5.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/25/03	<50	<0.5	1.17	230	13.3	6.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	<50	<0.5	1.08	39	15.0	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	<50	<0.5	1.02	268	16.3	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	<50	<0.5	1.47	318	16.9	5.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	<50	<0.5	--	--	15.2	6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	<50	<0.5	2.94	--	15.2	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	--	--	1.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	--	--	1.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	--	--	1.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/8/02	8,100	2.9	1.10	85	17.6	6.7	98	3.8	0.38	2.3	<0.5	2.5	19	--	28	600,000	2,000	10,000		
	8/14/02	1,700	<1.5	4.54	138	16.0	6.6	58	10	0.29	3.3	--	0.24	3.6	19	<3	6,000	700	20,000		
	11/13/02	510	<0.5	2.41	190	16.0	5.1	25	18	0.13	3.5	--	<0.1	4.8	12	<3	4,000	<10	7,000		
	2/25/03	6,600	2.9	1.70	149	13.5	6.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	6,700	3.4	1.24	42	15.0	6.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	4,000	1.5	1.29	111	16.8	6.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	3,000	1.4	1.21	160	16.9	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	23,000	<5	--	--	15.3	6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--



**TABLE 2**  
**INTRINSIC BIOREMEDIATION DATA**  
 Elliott's Service Center  
 761 Eel River Drive, Loleta, California  
 Blue Rock Project No. NC-002

Well No.	Date	TPHg (µg/L)	MTBE (µg/L)	D.O.* (mg/L)	Eh* (mV)	Temp (C)	pH*	Total Alkalinity (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Sulfate (mg/L)	Ortho Phosphate (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	COD (mg/L)	BOD (mg/L)	Heterotrophic Plate Count (CFU/mL)	Aerobic Hydrocarbon Degraders (CFU/mL)	Anaerobic Hydrocarbon Degraders (CFU/mL)
MW-4	5/4/04	31,000	<50	2.49	--	16.8	6.4	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	870	0.64	1.71	--	16.0	5.7	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	1,300	0.66	1.49	--	15.7	5.7	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	20,000	<2.5	1.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	5/8/02	<50	1.2	0.98	97	18.2	6.7	22	19	0.14	3.5	<0.5	<0.1	3.4	--	<3	2,000	130	1,000
	8/14/02	<50	1.8	4.20	237	15.3	6.7	26	17	<0.10	3.4	--	<0.1	<2	<10	<3	200	60	70
	11/13/02	<50	1.7	2.37	190	16.1	5.7	23	16	0.12	3.6	--	<0.1	2.2	47	<3	400,000	20	2,000
	2/25/03	<50	0.93	1.47	225	13.3	6.9	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	<50	1.5	1.21	40	14.9	5.7	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	<50	0.91	1.22	287	15.8	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	<50	1.3	1.29	292	17.1	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	<50	1.2	--	--	15.4	6.2	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	<50	0.6	2.94	--	16.9	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	<50	1.6	1.44	--	16.0	5.6	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	--	--	1.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	<50	0.73	1.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	5/8/02	<50	1.2	1.20	93	18.0	6.7	--	--	--	--	--	--	--	--	--	--	--	--
	8/14/02	<50	1.7	4.49	233	15.7	6.8	--	--	--	--	--	--	--	--	--	--	--	--
	11/13/02	<50	2.7	2.26	186	15.4	5.8	--	--	--	--	--	--	--	--	--	--	--	--
	2/25/03	<50	1.4	1.61	225	13.4	6.9	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	<50	0.85	1.27	38	15.0	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	<50	0.72	1.14	336	16.6	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	<50	0.96	1.16	265	16.8	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	<50	2.3	--	--	15.1	6.2	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	<50	<0.5	2.96	--	15.2	6.5	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	<50	1.3	1.53	--	16.0	5.8	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	--	--	1.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	<50	<0.5	1.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	5/8/02	<50	2	0.97	208	18.2	6.6	34	18	0.16	3.8	<0.5	<0.1	2.8	--	<3	30,000	1,000	30,000
	8/14/02	<50	1.3	4.47	244	15.8	6.7	33	19	<0.10	3.2	--	<0.1	<2	<10	<3	10,000	1,000	7,000
	11/13/02	<50	0.93	2.83	219	15.8	5.6	24	19	0.21	3.1	--	<0.1	4.0	14	<3	2,000	20	1,000
	2/25/03	<50	1.0	1.55	232	13.4	6.9	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	<50	0.81	1.19	39	14.7	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	<50	1.2	1.19	330	15.8	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	<50	<0.5	1.20	217	16.1	6.5	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	<50	<0.5	--	--	15.2	6.3	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	<50	<0.5	2.98	--	15.2	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	<50	<0.5	1.64	--	16.0	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	--	--	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	<50	<0.5	1.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	5/8/02	<50	<0.5	0.99	126	17.5	6.6	32	20	0.11	4.3	<0.5	<0.1	4.9	--	<3	2,000	100	10,000
	8/14/02	<50	0.63	4.17	213	15.7	6.8	--	--	--	--	--	--	--	--	--	--	--	--
	11/13/02	<50	0.57	3.77	258	14.3	5.3	--	--	--	--	--	--	--	--	--	--	--	--



**TABLE 2**  
**INTRINSIC BIOREMEDIATION DATA**  
 Elliott's Service Center  
 761 Eel River Drive, Loleta, California  
 Blue Rock Project No. NC-002

Well No.	Date	TPHg (µg/L)	MTBE (µg/L)	D.O.* (mg/L)	Eh* (mV)	Temp (C)	pH*	Total Alkalinity (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Sulfate (mg/L)	Ortho Phosphate (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	COD (mg/L)	BOD (mg/L)	Heterotrophic Plate Count (CFU/mL)	Aerobic Hydrocarbon Degraders (CFU/mL)	Anaerobic Hydrocarbon Degraders (CFU/mL)
MW-8	2/25/03	<50	<0.5	1.29	229	13.3	6.9	--	--	--	--	--	--	--	--	--	--	--	--
	5/9/03	<50	0.6	1.09	37	14.9	6.1	--	--	--	--	--	--	--	--	--	--	--	--
	8/18/03	<50	<0.5	1.09	334	16.8	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	11/7/03	<50	<0.5	1.19	267	16.4	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	2/11/04	<50	<0.5	--	--	15.7	6.3	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/04	<50	<0.5	2.70	--	15.5	6.4	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/04	--	--	1.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	--	--	1.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	--	--	1.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	7/27/04	150	0.68	1.87	--	16.0	5.6	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	140	0.81	1.71	--	15.7	6.0	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	440	7.9	1.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	7/27/04	84	<0.5	1.91	--	16.0	5.7	--	--	--	--	--	--	--	--	--	--	--	--
	11/5/04	1,200	<0.5	1.83	--	15.6	5.9	--	--	--	--	--	--	--	--	--	--	--	--
	2/2/05	180	<0.5	1.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Notes**

TPHg Total petroleum hydrocarbons as gasoline by EPAM 5030/8260B  
 MTBE Methyl tertiary butyl ether by EPA Method 8260B  
 µg/L micrograms per liter, equivalent to parts per billion - ppb  
 mg/L milligrams per liter, equivalent to parts per million - ppm  
 \* Parameters measured in field and recorded on field sheets  
 mV Millivolts  
 CFU/mL Colony forming units per milliliter  
 D.O. Dissolved oxygen measured with downhole meter  
 Eh Reduction-oxidation potential measured with downhole meter  
 pH pH measured with field meter  
 Alkalinity by EPA Method 310.1  
 Nitrate by EPA Method 353.3

Ammonia by EPA Method 350.2  
 Sulfate by EPA Method 375.4  
 Phosphate by EPA Method 365.2  
 TOC Total Organic Carbon by EPA Method 415.2  
 Ferrous Iron by Standard Method 3500  
 BOD Biological Oxygen Demand by EPA Method 405.1  
 Heterotrophic Plate Count Bacteria enumeration assay by Standard Method 9215B modified  
 Hydrocarbon Degraders Bacteria enumeration assay for diesel and gasoline degraders  
 "--": Not analyzed, available, or applicable  
 "<###" Not detected above the number indicated



**Table 3**  
**WELL CONSTRUCTION DETAILS**

Elliott's Service Center  
761 Eel River Drive  
Loleta, California  
Blue Rock Project No. NC-002

<b>Well Identification</b>	<b>Date Installed</b>	<b>Installed by</b>	<b>Casing Diameter (inches)</b>	<b>Total Depth (feet)</b>	<b>Blank Interval (feet)</b>	<b>Screened Interval (feet)</b>	<b>Slot Size (inches)</b>	<b>Filter Pack (feet)</b>	<b>Bentonite Seal (feet)</b>	<b>Cement (feet)</b>
MW-1	5/10/00	Clearwater	2	20	0-5	5-20	0.02	4.5-20	2.5-4.5	0-2.5
MW-2	5/10/00	Clearwater	2	20	0-5	5-20	0.02	4.5-20	2.5-4.5	0-2.5
MW-3	5/10/00	Clearwater	2	20	0-5	5-20	0.02	4.5-20	2.5-4.5	0-2.5
MW-4	5/10/00	Clearwater	2	20	0-5	5-20	0.02	4.5-20	2.5-4.5	0-2.5
MW-5	8/8/01	Clearwater	2	25	0-5	5-25	0.01	4-25	3-4	0-3
MW-6	8/8/01	Clearwater	2	25	0-5	5-25	0.01	4-25	3-4	0-3
MW-7	8/8/01	Clearwater	2	25	0-5	5-25	0.01	4-25	3-4	0-3
MW-8	8/8/01	Clearwater	2	25	0-5	5-25	0.01	4-25	3-4	0-3
MW-9	6/16/04	Blue Rock	2	25	0-5	5-25	0.01	4-25	3-4	0-3
MW-10	6/16/04	Blue Rock	2	25	0-5	5-25	0.01	4-25	3-4	0-3
DOM-1	unknown	unknown	6	45	unknown	unknown	unknown	unknown	unknown	unknown

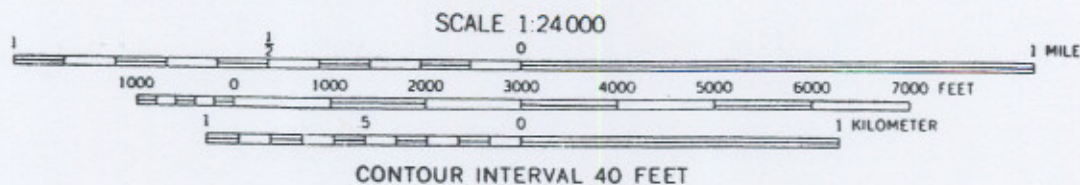
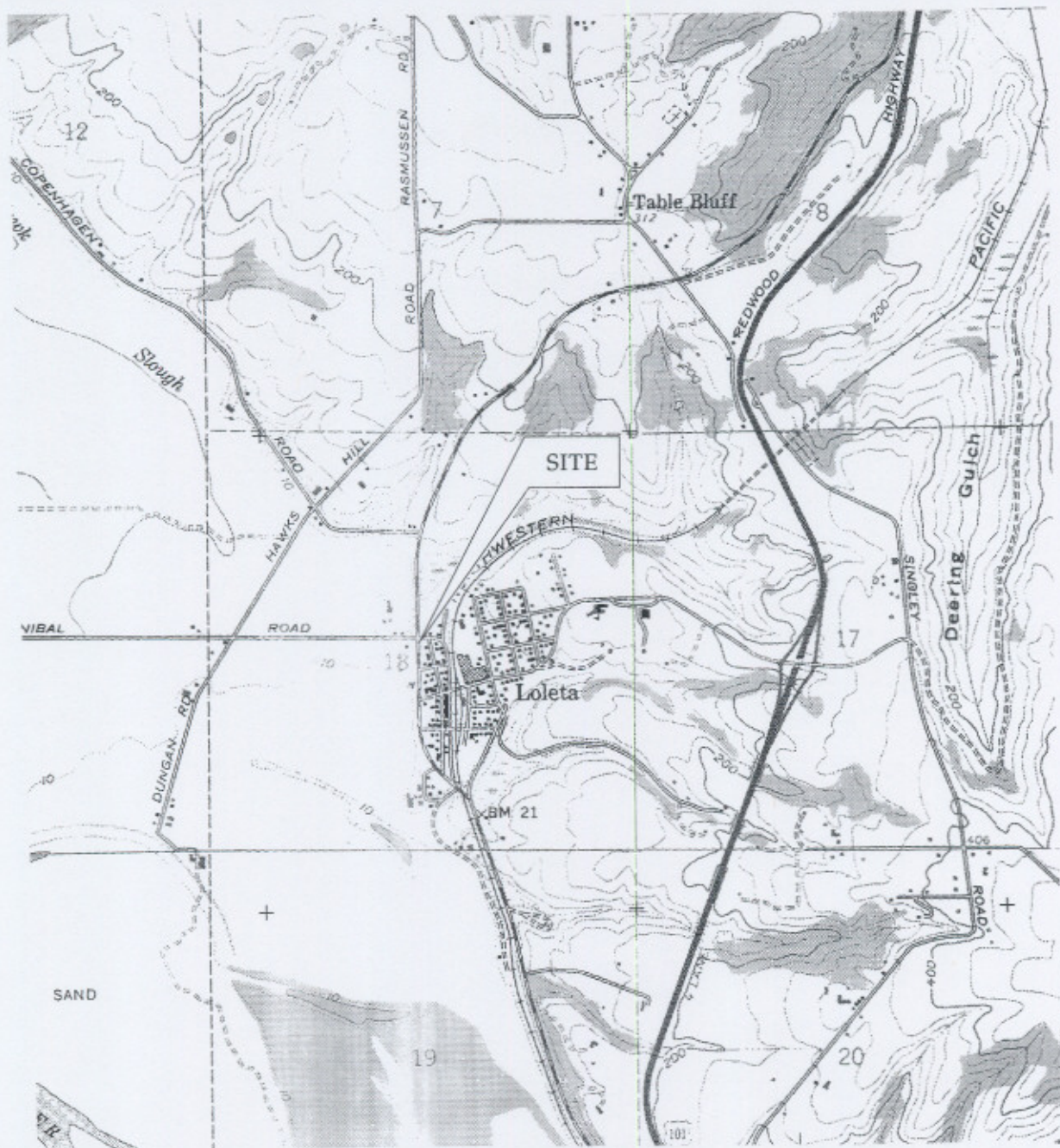


**Table 4**  
**GROUNDWATER MONITORING SCHEDULE**  
 Elliott's Service Center, 761 Eel River Drive, Loleta, CA  
 Blue Rock Project # NC-002

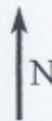
Well	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Notes
MW-1	X	X	X	X	Nearly ND well
MW-2	X	X	X	X	Impacted well
MW-3	X				ND well
MW-4	X	X	X	X	Impacted well
MW-5	X		X		Nearly ND well
MW-6	X		X		Nearly ND well
MW-7	X		X		ND well
MW-8	X				ND well
MW-9	X	X	X	X	Nearly ND well
MW-10	X	X	X	X	Nearly ND well

Samples from all monitoring wells will be analyzed for TPHd, TPHg, BTEX and MTBE by EPA Methods 8015M and 8260B.





MAP SOURCE: USGS Fields Landing, CA  
Quadrangle



## Site Location Map

Former Elliott's Service Center  
761 Eel River Drive  
Loleta, California



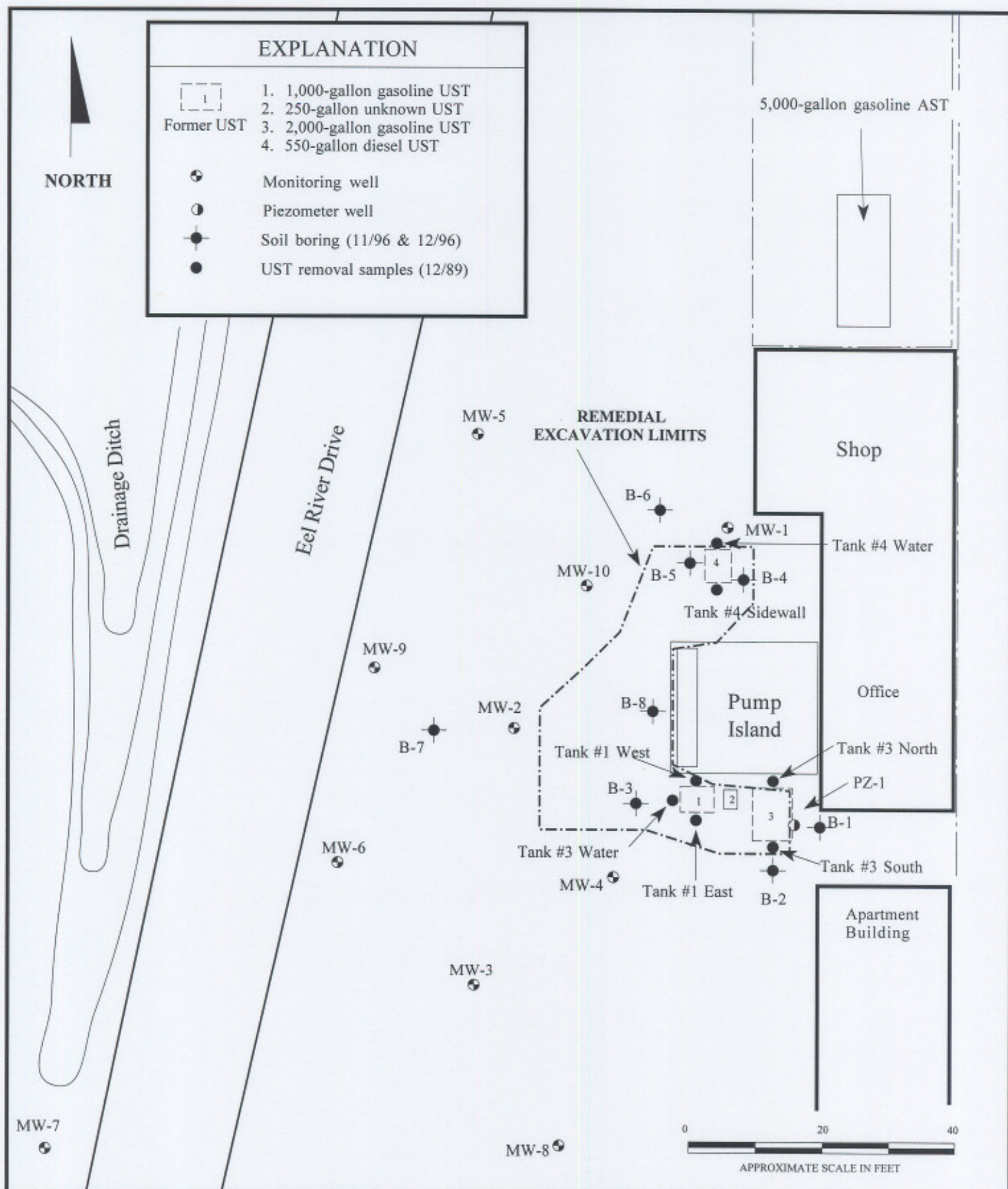
BLUE ROCK  
ENVIRONMENTAL, INC.

Project No.  
NC-002

Date  
5/04

Figure  
1





## Site Plan

Elliott's Service Center  
761 Eel River Drive  
Loleta, California



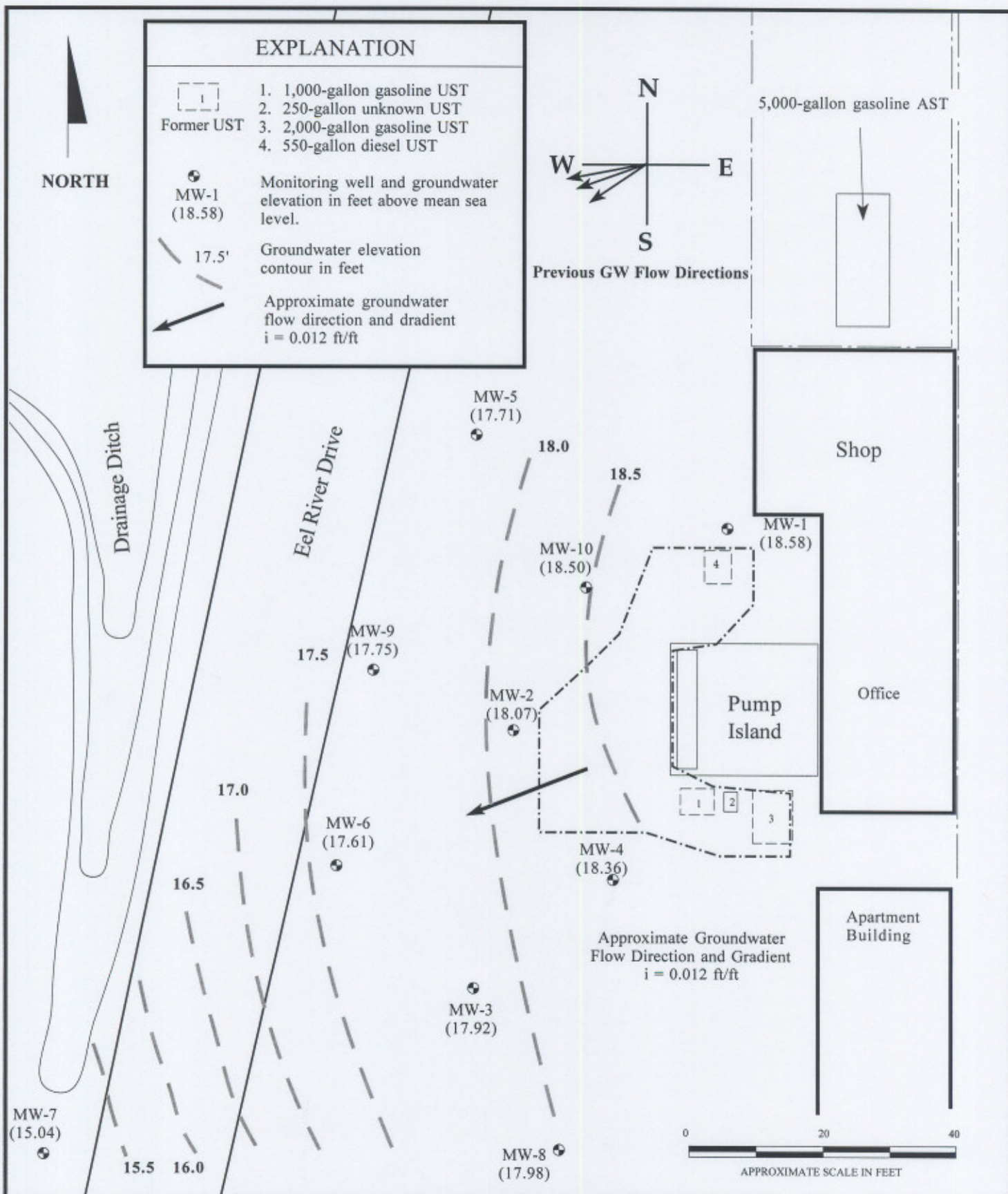
BLUE ROCK  
ENVIRONMENTAL, INC.

Project No.  
NC-002

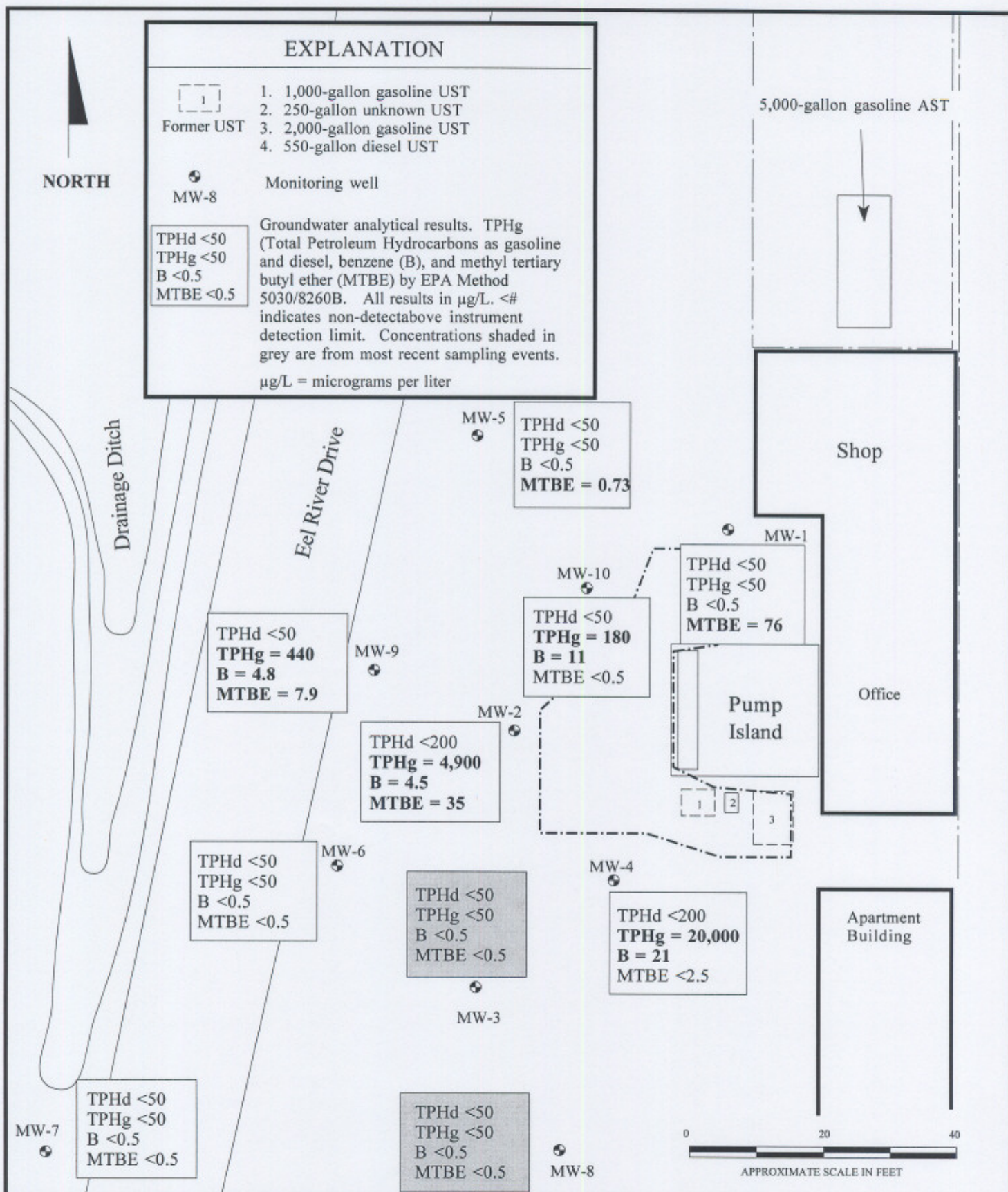
Report Date  
2/05

Figure  
2









### Dissolved-Phase TPHd Distribution Map - 2/2/05

**Elliott's Service Center**  
761 Eel River Drive  
Loleta, California



BLUE ROCK  
ENVIRONMENTAL, INC.

Project No.  
NC-2

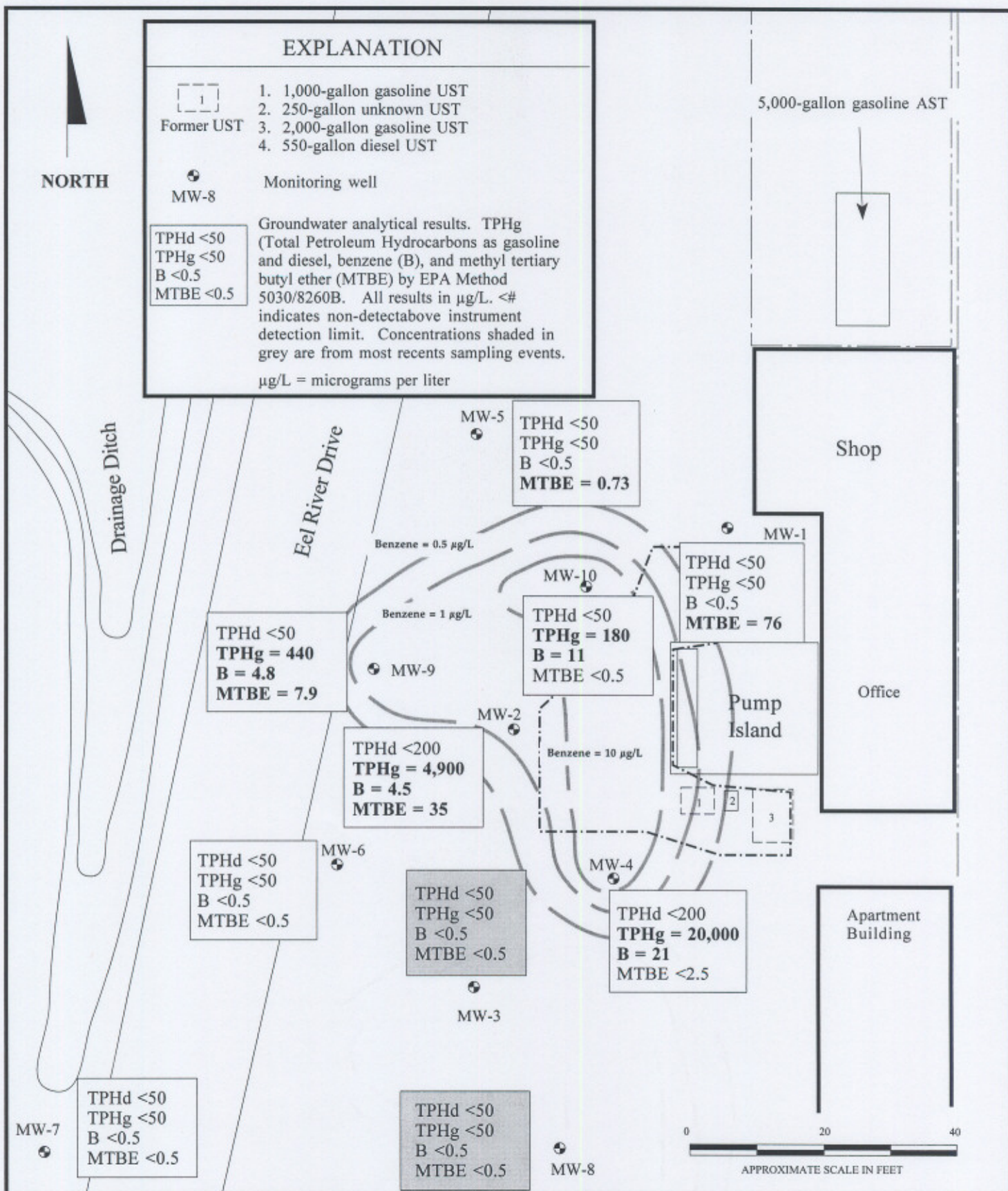
Report Date  
2/05

Figure  
4a









# **Dissolved-Phase Benzene Distribution Map - 2/2/05**

Elliott's Service Center  
 761 Eel River Drive  
 Loeleta, California



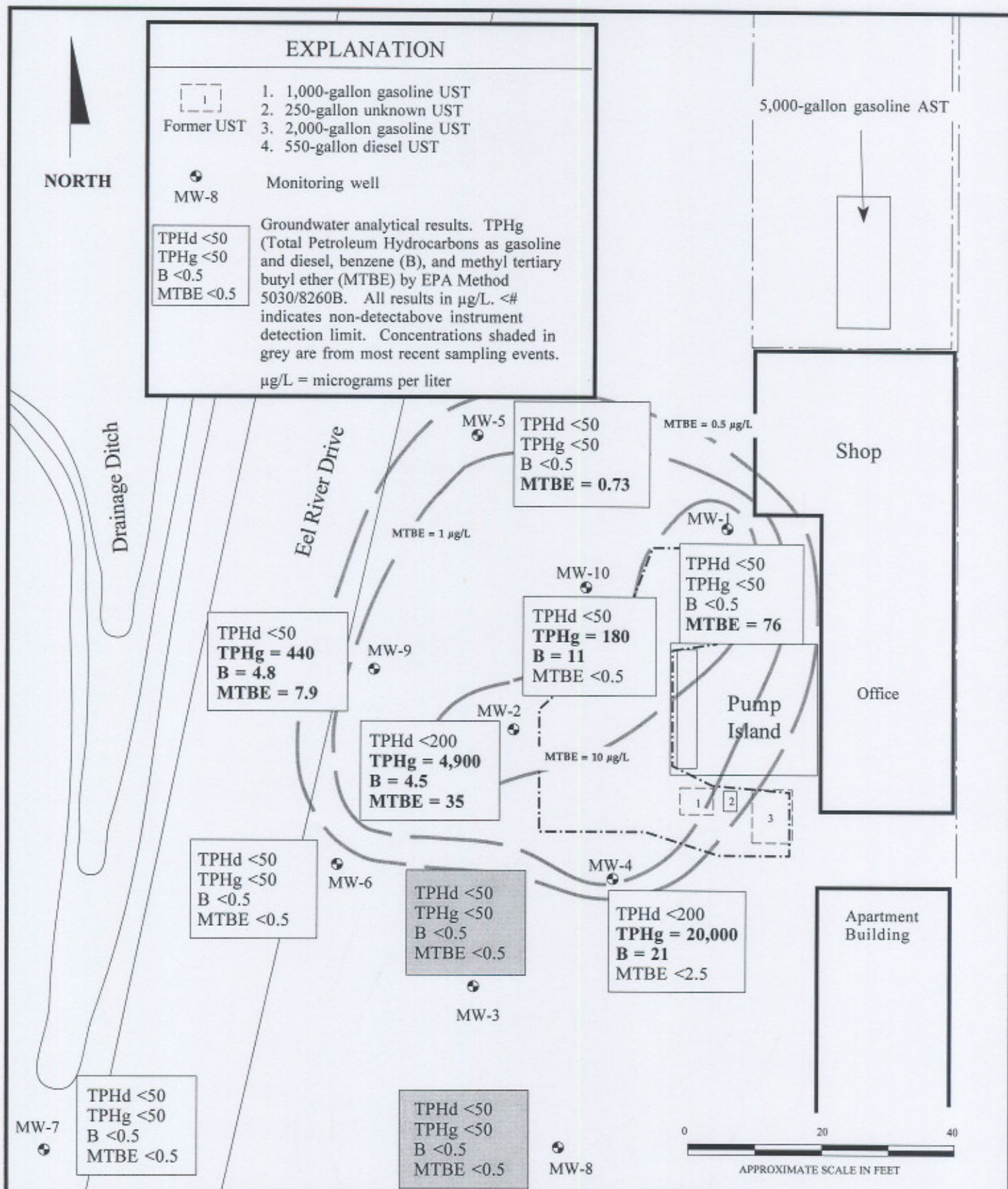
**BLUE ROCK  
 ENVIRONMENTAL, INC.**

Project No.  
 NC-002

Report Date  
 2/05

Figure  
 4c





### Dissolved-Phase MTBE Distribution Map - 2/2/05

Elliott's Service Center  
761 Eel River Drive  
Loleta, California



**BLUE ROCK  
ENVIRONMENTAL, INC.**

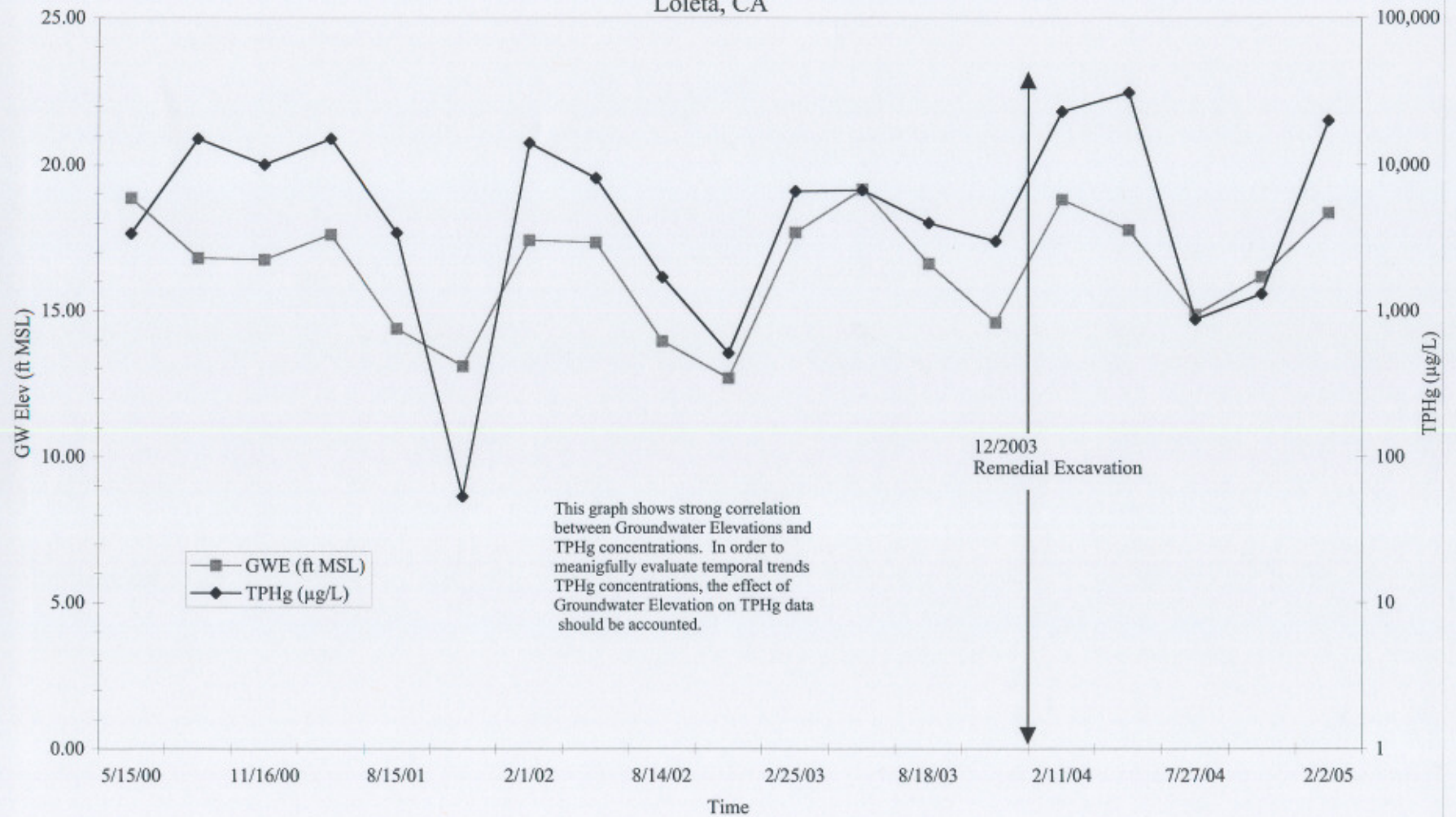
Project No.  
NC-002

Report Date  
2/05

Figure  
4d

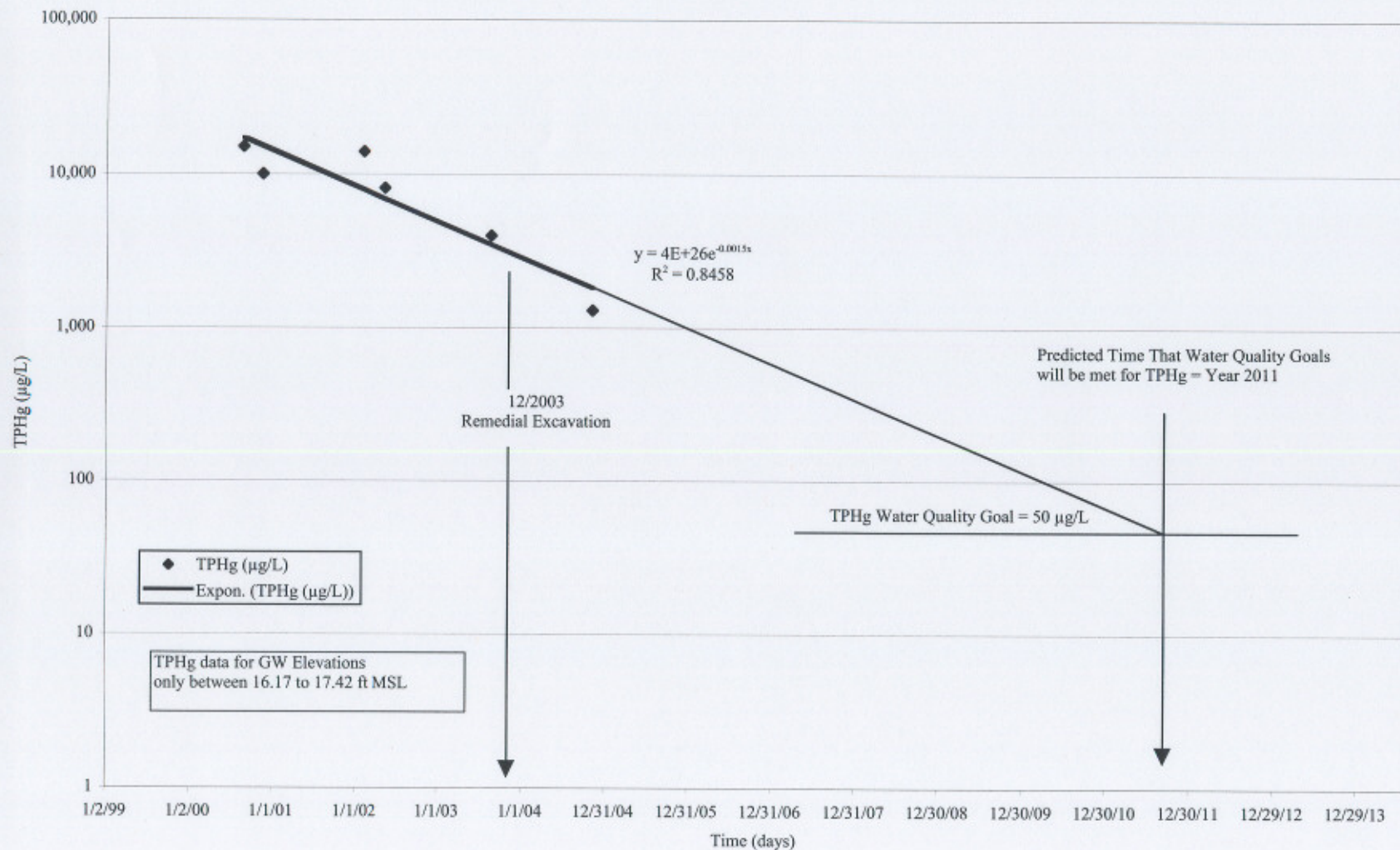


**Chart 1**  
**MW-4: TPHg & GW Elev Vs. Time**  
 Elliot's Sevice Station  
 761 Eel Drive  
 Loleta, CA





**Chart 2**  
**MW-4: TPHg Vs. Time for Consistent GW Elev (16'-17.5')**  
 Elliot's Service Station  
 761 Eel Drive  
 Loretta, CA





## GAUGING DATA/PURGE CALCULATIONS

Job No.: NC-2

Location: 761 S. 1 River Drive

Date: 2/2/05

**Tech(s):** M. Richard

[illegible]

**Explanation:**

DIA. = Well Diameter

DTB = Depth to Bottom

DTW = Depth to Water

ST = Saturated Thickness (DTB-DTW)

CV = Casing Volume (ST x cf)

PV = Purge Volume (standard 3 x CV,  
well development 10 x CV)

SPH = Thickness of Separate Phase Hydrocarbons

### Conversion Factors (cf):

2 in. dia. well  $cf = 0.16$  gal./ft.

4 in. dia. well cf = 0.65 gal./ft.

6 in. dia. well cf = 1.44 gal./ft.



BLUE ROCK  
ENVIRONMENTAL, INC.



## PURGING DATA

SHEET 1 OF 3

Job No.: NC-2 Location: 761 Eel River Dr Date: 2/2/05 Tech: M. Richard

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-1		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge	11:15	<1.00	0.21	60.2	6.10	TPHg <u>5.91</u> TPHd <u>8260</u>
volume	11:35	~1.80	0.22	60.4	5.97	BTEX <u>MTBE</u> 5-oxygenates
<u>3:70</u>	11:55	~3.70	0.20	60.4	5.92	Purging Method:
						PVC bailer / Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
Clear to low fast no no light brown turb recharge sheen odor						Dedicated / Disposable bailer
						Sample at: <u>12:00</u>

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-2		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge	14:15	<1.00	0.33	60.6	5.85	TPHg <u>5.91</u> TPHd <u>8260</u>
volume	14:35	~2.10	0.26	60.4	5.78	BTEX <u>MTBE</u> 5-oxygenates
<u>4:27</u>	14:55	~4.27	0.21	60.5	5.74	Purging Method:
						PVC bailer/Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
Clear to low to fast no trace light brown med turb recharge sheen odor						Dedicated / Disposable bailer
						Sample at: <u>15:00</u>

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-4		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge	15:15	<1.00	0.30	60.7	6.05	TPHg <u>5.91</u> TPHd <u>8260</u>
volume	15:35	~1.50	0.37	60.5	5.90	BTEX <u>MTBE</u> 5-oxygenates
<u>3:08</u>	15:55	~3.08	0.37	60.5	5.84	Purging Method:
						PVC bailer/Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
Clear to low to fast no HC light brown med turb recharge sheen odor						Dedicated / Disposable bailer
						Sample at: <u>16:00</u>



SHEET 2 OF 3

Leicta

Sample at: 11:00

Sample at: 10:00

Sample at: 4:00



## PURGING DATA

SHEET 3 OF 3

Job No.: NC-2 Location: 761 Eel River Dr. Date: 2/2/05 Tech: M. Richard

Lokta

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-9		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge volume	13:15	41.00	0.29	60.9	6.16	TPHg <u>Seal</u> TPHd <u>Seal</u> 8260
	13:35	23.20	0.34	60.7	6.15	BTEX <u>Seal</u> MTBE 5-oxygenates
	13:55	26.42	0.33	60.7	6.08	Purging Method:
						PVC bailer / Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
clear to low to fast no trace light brown/mod turb recharge sheen odor						Dedicated / Disposable bailer
						Sample at: 14:00

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
MW-10		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge volume	12:15	41.00	0.39	60.9	6.23	TPHg <u>Seal</u> TPHd <u>Seal</u> 8260
	12:35	23.50	0.42	60.8	6.20	BTEX <u>Seal</u> MTBE 5-oxygenates
	12:55	27.03	0.37	60.7	6.17	Purging Method:
						PVC bailer/Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
clear to low to fast no trace light brown/mod turb recharge sheen odor						Dedicated / Disposable bailer
						Sample at: 13:00

WELL No.	TIME	VOLUME (gal.)	COND. (mS/cm)	TEMP. (deg. F.)	pH	
		0	---	---	---	Sample for: TPHmo 7-oxygenates
Calc. purge volume						TPHg TPHd 8260
						BTEX MTBE 5-oxygenates
						Purging Method:
						PVC bailer/Pump/Disposable Bailer
COMMENTS: color, turbidity, recharge, sheen, odor						Sampling Method:
						Dedicated / Disposable bailer
						Sample at:





Report Number : 42234

Date : 2/10/2005

Scott Ferriman  
Blue Rock Environmental, Inc.  
535 3rd Street, Suite 100  
Eureka, CA 95501

Subject : 8 Water Samples  
Project Name : Elliot's  
Project Number : NC-2

Dear Mr. Ferriman,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff





Report Number : 42234

Date : 2/10/2005

Subject : 8 Water Samples  
Project Name : Elliot's  
Project Number : NC-2

## Case Narrative

The Method Reporting Limit for TPH as Diesel is increased due to interference from Gasoline-Range Hydrocarbons for samples MW-2 and MW-4.

Approved By:

A handwritten signature in black ink, appearing to read "Joel Kiff". Below the signature, the name "Joel Kiff" is printed in a small, sans-serif font.

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800





Report Number : 42234

Date : 2/10/2005

Project Name : Elliot's

Project Number : NC-2

Sample : MW-1

Matrix : Water

Lab Number : 42234-01

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-t-butyl ether (MTBE)	76	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	96.3		% Recovery	EPA 8260B	2/8/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/9/2005

Sample : MW-2

Matrix : Water

Lab Number : 42234-02

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	4.5	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	5.8	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	160	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	390	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-t-butyl ether (MTBE)	35	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	4900	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	96.8		% Recovery	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	2/8/2005
TPH as Diesel (Silica Gel)	< 200	200	ug/L	M EPA 8015	2/9/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800





Report Number : 42234

Date : 2/10/2005

Project Name : **Elliot's**Project Number : **NC-2**Sample : **MW-4**

Matrix : Water

Lab Number : 42234-03

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>21</b>	2.5	ug/L	EPA 8260B	2/9/2005
<b>Toluene</b>	<b>9.9</b>	2.5	ug/L	EPA 8260B	2/9/2005
<b>Ethylbenzene</b>	<b>920</b>	2.5	ug/L	EPA 8260B	2/9/2005
<b>Total Xylenes</b>	<b>920</b>	2.5	ug/L	EPA 8260B	2/9/2005
<b>Methyl-t-butyl ether (MTBE)</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	2/9/2005
<b>TPH as Gasoline</b>	<b>20000</b>	250	ug/L	EPA 8260B	2/9/2005
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	2/9/2005
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	2/9/2005
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 200</b>	200	ug/L	M EPA 8015	2/9/2005

Sample : **MW-5**

Matrix : Water

Lab Number : 42234-04

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	2/9/2005
<b>Toluene</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	2/9/2005
<b>Ethylbenzene</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	2/9/2005
<b>Total Xylenes</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	2/9/2005
<b>Methyl-t-butyl ether (MTBE)</b>	<b>0.73</b>	0.50	ug/L	EPA 8260B	2/9/2005
<b>TPH as Gasoline</b>	<b>&lt; 50</b>	50	ug/L	EPA 8260B	2/9/2005
Toluene - d8 (Surr)	97.9		% Recovery	EPA 8260B	2/9/2005
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	2/9/2005
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 50</b>	50	ug/L	M EPA 8015	2/9/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800





Report Number : 42234

Date : 2/10/2005

Project Name : Elliot's

Project Number : NC-2

Sample : MW-6

Matrix : Water

Lab Number : 42234-05

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	2/8/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/9/2005

Sample : MW-7

Matrix : Water

Lab Number : 42234-06

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	96.0		% Recovery	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	2/8/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/9/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800





Report Number : 42234

Date : 2/10/2005

Project Name : Elliot's

Project Number : NC-2

Sample : MW-9

Matrix : Water

Lab Number : 42234-07

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	4.8	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	1.1	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	8.7	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	51	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-t-butyl ether (MTBE)	7.9	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	440	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	97.1		% Recovery	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	2/8/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/9/2005

Sample : MW-10

Matrix : Water

Lab Number : 42234-08

Sample Date :2/2/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	11	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	1.1	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	19	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	180	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	96.1		% Recovery	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	2/8/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/9/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



**QC Report : Method Blank Data**Project Name : **Elliot's**Project Number : **NC-2**

Report Number : 42234

Date : 2/10/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/8/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
Methyl-4-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/8/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/8/2005
Toluene - d8 (Surr)	99.6		%	EPA 8260B	2/8/2005
4-Bromofluorobenzene (Surr)	97.8		%	EPA 8260B	2/8/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/9/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/9/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/9/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/9/2005
Methyl-4-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/9/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/9/2005
Toluene - d8 (Surr)	99.3		%	EPA 8260B	2/9/2005
4-Bromofluorobenzene (Surr)	97.6		%	EPA 8260B	2/9/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff



Report Number : 42234

Date : 2/10/2005

**QC Report : Matrix Spike/ Matrix Spike Duplicate**

Project Name : **Elliot's**


Project Number : **NC-2**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	Blank	<50	1000	1000	948	944	ug/L	M EPA 8015	2/8/05	94.8	94.4	0.359	70-130	25
Benzene	42234-01	<0.50	39.4	39.5	37.6	38.0	ug/L	EPA 8260B	2/8/05	95.5	96.0	0.601	70-130	25
Toluene	42234-01	<0.50	39.4	39.5	39.6	39.6	ug/L	EPA 8260B	2/8/05	100	100	0.343	70-130	25
Tert-Butanol	42234-01	<5.0	197	198	205	205	ug/L	EPA 8260B	2/8/05	104	104	0.199	70-130	25
Methyl-t-Butyl Ether	42234-01	76	39.4	39.5	105	104	ug/L	EPA 8260B	2/8/05	74.6	72.1	3.40	70-130	25
Benzene	42262-01	100	40.0	40.0	147	142	ug/L	EPA 8260B	2/9/05	109	97.1	11.7	70-130	25
Toluene	42262-01	14	40.0	40.0	55.9	54.5	ug/L	EPA 8260B	2/9/05	106	102	3.42	70-130	25
Tert-Butanol	42262-01	46	200	200	252	252	ug/L	EPA 8260B	2/9/05	103	103	0.0545	70-130	25
Methyl-t-Butyl Ether	42262-01	200	40.0	40.0	243	241	ug/L	EPA 8260B	2/9/05	113	110	2.75	70-130	25

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By: Joel Kiff





QC Report : Laboratory Control Sample (LCS)

Report Number : 42234

Date : 2/10/2005

Project Name : **Elliot's**

Project Number : **NC-2**

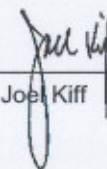
Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	2/7/05	97.0	70-130
Toluene	40.0	ug/L	EPA 8260B	2/7/05	102	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/7/05	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/7/05	79.9	70-130
Benzene	40.0	ug/L	EPA 8260B	2/9/05	100	70-130
Toluene	40.0	ug/L	EPA 8260B	2/9/05	99.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/9/05	96.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/9/05	95.7	70-130

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:

Joel Kiff







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Davis, CA 95616  
Lab: 530.297.4800  
Fax: 530.297.4808

Lab No. 42234

Page 1 of 1

Project Contact (Hardcopy or PDF To): <u>Scott Ferrman</u>		California EDF Report? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Chain-of-Custody Record and Analysis Request																								
Company/Address: <u>Blue Rock Env Inc</u> <u>535 Third St. Ste 100 Eureka CA</u>		Recommended but not mandatory to complete this section: Sampling Company Log Code: . . .		Analysis Request												TAT												
Phone No.: <u>(707) 441-1934</u>	FAX No.: <u>(707) 441-1949</u>	Global ID: <u>T-0-6-0-2-3-0-0-1-5-5</u>																										
Project Number: <u>NC-2</u>	P.O. No.: <u>-</u>	EDF Deliverable To (Email Address): <u>melissa@bluerockenv.com</u>																										
Project Name: <u>Elliots</u>		Sampler Signature: <u>Melissa Richard</u>														For Lab Use Only												
Project Address: <u>761 Eel River Dr</u> <u>Loleta CA</u>																												
Sample Designation		Date	Time	40 ml VOA	SLEEVE		HCl	HNO <sub>3</sub>	ICE	NONE	WATER	SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	12 hr/24 hr/48 hr/72 hr (X)		
mw-1		2/2/05	12:00	6			X		X		X			X	X												X	01
mw-2			15:00																									02
mw-4			16:00																									03
mw-5			11:00																									04
mw-6			10:00																									05
mw-7			9:00																									06
mw-9			14:00																									07
mw-10			13:00																									08
Relinquished by: <u>Melissa Richard</u>		Date <u>2/3/05</u>	Time <u>-</u>	Received by: <u>Fed Ex</u>		Remarks: The samples arrived on wet ice via fed ex @ 4.30C. The temp was 4.30C using JR-1. BAP 020405 1125																						
Relinquished by:		Date	Time	Received by:																								
Relinquished by:		Date <u>020405</u>	Time <u>1125</u>	Received by Laboratory: <u>B. A. B.</u> KIFF Analytical																								
						Bill to: <u>Foster City</u>																						